



Star qualities

What it takes for mobile development projects to succeed



Mobile isn't just here. It's the new normal, and it enables enterprises to interact and engage with customers and employees in novel ways. But as mobile apps take center stage, development teams face enormous pressure, having to continually adapt to changing mobile technologies and user expectations.

How do some development projects deliver great applications—meeting expectations, on time and on budget—when most don't? The secret, it turns out, lies in having both the right team and the right approach.

How successful was your last mobile application development project? Was your app delivered on time? Was it completed on budget? Did the project meet, or even surpass, expectations?

If you answered no to any of these questions, you're not alone.

In our global survey of 585 mobile application developers and development managers, only one-third of the respondents say their mobile application development projects achieve the three criteria for success—fully meeting budget, schedule and project objectives.

2/3

of mobile application development projects **fail** to fully achieve budget, schedule and project objectives.

In some ways, this isn't surprising. Before the curtain rises and your app debuts, there's a lot that goes on backstage—from design and development to testing and deployment. Application developers have struggled for decades to meet project schedules, budgets and objectives.¹

Then came mobile. It's created what Forrester Research describes as "the mobile mind shift...the expectation that I can get what I want in my immediate context and moments of need."² This shift has put greater pressure on enterprises, and, in turn, on developers.

So how do the one-third achieve their success? What's their secret?

About the study

To gain insight into successful mobile application development practices today, the IBM Center for Applied Insights surveyed 585 developers and development managers from nine countries—the United States, Canada, Germany, the United Kingdom, India, Japan, China, Russia and Brazil. These respondents are either coding or managing mobile application development projects. Survey participants work for companies with more than 1,000 employees and across a mix of industries.

About the IBM Center for Applied Insights

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The IBM Center for Applied Insights introduces new ways of thinking, working and leading. Through evidence-based research, the Center arms leaders with pragmatic guidance and the case for change.



What are the star qualities of successful mobile projects?

As we went behind the scenes and surveyed application developers and development managers to gain insight into successful mobile application development practices, we uncovered several important differences.

You might guess that the size of the development team or use of a particular technology would make a difference between success and failure when it comes to mobile application development. However, across many factors—including team size, programming language, operating system, platform used, and native vs. web vs. hybrid implementation—there are no statistical differences between the successful projects and others.

So what does make a difference?

We found that successful projects share four characteristics.

First, a seasoned cast is vital. Not only do the star teams have the necessary **mobile development experience**, they also have the right **business and industry expertise**.

Second, they use **cloud-based platforms and mobile application development platforms** more heavily. Greater flexibility can set the stage for faster time-to-market and greater agility as mobile technologies change.

Third, developers **collaborate closely** with the entire ecosystem, including design, user experience, quality assurance, IT operations, business stakeholders and end users. As with any production, collaboration throughout the process keeps everything running smoothly.

Finally, successful project teams don't just pay attention to the ratings and reviews. They are more likely to **analyze user behavior** and gain inspiration based on what they learn.

With the right team *and* the right approach, mobile development projects are scripting their way to fully achieve all three success criteria—budget, schedule and project objectives.

Successful mobile development projects

**EXPERIENCE AND EXPERTISE
MAKE FOR A STRONG CAST**

30%

more likely to have at least one developer with 5+ years of mobile development experience

**PLATFORMS SET THE
STAGE FOR FLEXIBILITY**



**COLLABORATION
KEEPS THE PRODUCTION
ON TRACK**



2/3

of successful projects use cloud APIs to build the application



6 in 10

successful projects collaborate closely with the business and end users throughout development

**USER ANALYTICS
INSPIRES THE
NEXT ACT**



37%

more likely to analyze social sentiment about the app





Experience and expertise make for a strong cast



“One of the greatest challenges is finding qualified developers, with real experience in mobile.”

– Mobile Development Manager, Brazil

Successful projects are 30% more likely to have at least one developer with more than 5 years of mobile development experience.

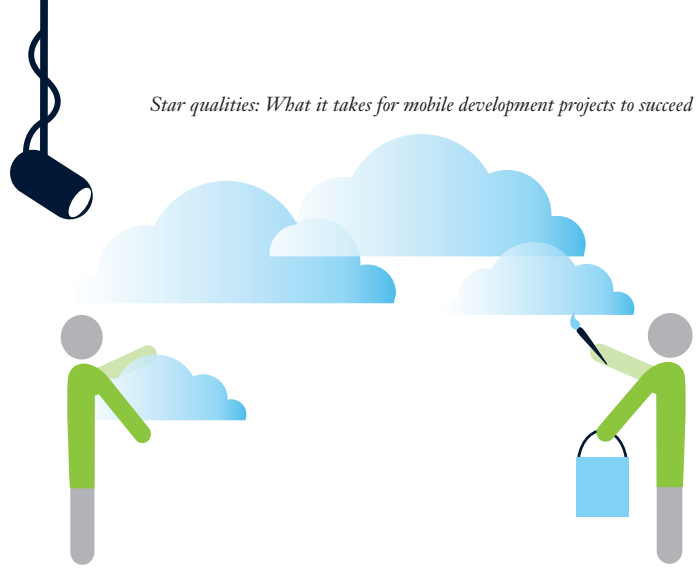
Like any successful performance, achieving project goals starts with the right cast. But what exactly does that look like?

Study participants reveal that it isn't the size of the development team, but rather the depth and breadth of expertise that matters. For example, successful projects are less likely than others to cite lack of specialized business and industry expertise as a challenge. As a result, they're well positioned to work in concert with the business and end users—two critical stakeholders in any development project.

Successful projects are also 30 percent more likely to have at least one developer with over five years of mobile experience. Given that mobile apps have only gained momentum in recent years, this can be a tough challenge. But having at least one highly experienced voice in the mix clearly pays off.

| Major challenges faced | Successful projects | All others | Successful projects versus all others |
|--|---------------------|------------|---------------------------------------|
| Inadequate staffing to meet objectives | 27% | 39% | -31% |
| Lack of development expertise | 26% | 37% | -30% |
| Lack of specialized business or industry expertise | 23% | 32% | -28% |

Platforms set the stage for flexibility



Flexibility and speed are hallmarks of platforms that use cloud services and APIs. And application development provides a prime use case for cloud. There's no waiting for hardware to arrive and no complex set-up procedures. Developers simply select the services they need from the cloud, and they can jump right in. As a result, it's no surprise that two-thirds of successful projects report using cloud APIs to assemble applications, and more than half use cloud application development services.

Additionally, mobile application development platforms enable developers to use their preferred development approach when building apps for different devices and operating systems, and successful project teams are 31 percent more likely to use them. Thanks to the flexibility afforded by both cloud and mobile application development platforms, developers on successful projects are 33 percent less likely than others to feel "locked into" a particular platform or technology—an important advantage given the continual changes in mobile technology.

Accelerating mobile development with cloud

When the CIO for the San Francisco Bay Area Rapid Transit (BART) system wanted to give maintenance engineers and supervisors mobile access to the company's maintenance reliability information system, he didn't have months to wait. Using cloud-based integration services and platforms, the team reduced provisioning and development time by over 90 percent. This allowed them to develop the new mobile app in only 15 days, instead of an estimated six months. And new features can go live in 45 seconds—a huge win when it comes to meeting user expectations.³

Successful projects are 35% more likely to use cloud-based platforms to develop the mobile application.

A platform approach

| | Successful projects | All others | Successful projects versus all others |
|--|---------------------|------------|---------------------------------------|
| Cloud APIs for application assembly | 67% | 56% | +20% |
| Mobile Backend as a Service (cloud application development services) | 53% | 41% | +29% |
| Mobile application development platforms (MADPs) | 46% | 35% | +31% |
| Cloud-based platforms for development | 31% | 23% | +35% |

Collaboration keeps the production on track



Smarter collaboration helps app stay on target

Mobile app development firm PointSource demonstrates the value of close collaboration. As PointSource created a new mobile app to help Financial Insurance Management Corp. (FIMC) increase membership renewals, it used an iterative development schedule that kept QA, end users and business stakeholders in the loop. The result? This approach helped developers stay synchronized with business priorities, keep up with changing business requirements, and confirm software quality, all while delivering the mobile solution in just three months. This collaborative approach enables PointSource to regularly update their clients' mobile apps with new features and improvements based on customer feedback.⁴

Study participants say the number one trait of effective mobile app developers is the ability to collaborate effectively with others outside the core team, such as marketing, communications, and technical support. And what differentiates successful projects is the level of collaboration. Respondents on successful projects report *close* collaboration between developers and the entire ecosystem *throughout* the development process.

On nearly two-thirds of successful projects, the development team collaborates closely with business stakeholders throughout development—something that less than half of the less successful projects do. Three-quarters also work closely with IT ops. Given that mobile development requires frequent releases, this collaboration is increasingly vital.

Three-fourths of successful projects collaborate using agile software development methods, versus two-thirds of less successful projects.

And, most notable, six in ten successful projects cite close collaboration with end users. With the increased user expectations that come with the mobile mind shift, aligning to user needs early and often can help win fans.

| Close collaboration throughout with | Successful projects | All others | Successful projects versus all others |
|--|---------------------|------------|---------------------------------------|
| Mobile interaction designers/user experience experts | 69% | 57% | +21% |
| Quality assurance | 67% | 57% | +18% |
| IT operations (deploy/support the application) | 74% | 64% | +16% |
| Business stakeholders | 62% | 48% | +29% |
| End users | 58% | 46% | +26% |

User analytics inspires the next act



Successful project teams don't just collaborate with end users, they also observe them closely. Most projects monitor general usage stats (e.g., number of downloads and users) and direct user feedback (e.g., bug reports and user reviews).

However, successful projects are more likely to analyze indirect feedback as well, such as how often users access an app, which features are most and least used, and even what users say about the app on social media sites.

And this insight doesn't just help improve existing apps. It serves as inspiration for new apps. In fact, successful projects are nearly 1.6 times more likely than others to cite usage analytics as a top source of development inspiration.

Analytics helps bank respond quickly to customers

Canada's Tangerine bank offers a great example of the benefits of incorporating indirect feedback data. After the bank integrated a quality assurance service into its mobile app that combines behind-the-scenes usage data with direct customer feedback, the bank could more quickly act on customer input. According to the bank's CIO, "[Customers] don't have to wait six months for us to address their concerns." What's more, the CIO says, the feedback "helps us learn and make better applications."⁵

Two-thirds of successful projects analyze user behavior closely. Compared to other projects, they are 20% more likely to do so.

| Significant analysis of | Successful projects | All others | Successful projects versus all others |
|--|---------------------|------------|---------------------------------------|
| User behavior (app feature usage) | 65% | 54% | +20% |
| Regularity of application use | 66% | 52% | +27% |
| Social media sentiment about the application | 48% | 35% | +37% |

How to make your mobile development project shine

Take your cues from the successful mobile application project playbook.



Build a team of mobile stars

Successful projects are more likely to have at least one developer with five-plus years of mobile experience. They make use of strong communication and collaboration skills, as well as specialized business and industry expertise. And more than half favor using developers who regularly work together.

- Identify skill gaps and determine how to fill them through training or partnering.
- Foster a stable team, identifying top developers and mapping out a career path to keep them.



Satisfy the need for speed and flexibility with platforms

Platforms that use cloud services and APIs provide enormous speed and flexibility. Successful projects are less likely to feel locked into any particular mobile platform or technology.

- Consider cloud-based platforms and APIs to boost development speed.
- Use standards-based mobile application development platforms to avoid vendor lock-in.



Collaborate with the ecosystem

A top trait of an effective mobile application developer today is collaboration. Ongoing collaboration with others outside the core development team can lead to higher customer satisfaction and better reviews.

- Identify developers with strong communication and collaboration skills.
- Provide the right tools and environment to foster collaboration with designers, testers, IT ops, marketing, business stakeholders and end users throughout development.



Keep an analytical eye on your audience

Successful projects are improved by indirect audience feedback, such as how they interact with the apps. Whether gathering feedback during usability testing or after the app goes live, successful project teams keep a close analytical eye on their audience.

- Conduct usability testing during development, and use analytics after launch to identify popular (and unpopular) features and functions.
- Continually improve the application by incorporating user feedback and analytical insights.

About the authors

Phil Buckellew is Vice President of Enterprise Mobile for IBM, responsible for setting the strategy for mobile solutions across the IBM Software portfolio. He has worked in many functions (development, marketing, sales) in many parts of enterprise software (systems management, security, collaboration). He has a strong focus on creating client value and building unique differentiation. Prior to IBM, he worked in brand management for several consumer products companies. He also holds a Management Information Systems degree from the University of Texas at Austin and an MBA from the Harvard Business School. Phil can be reached at pbuckell@us.ibm.com, via Twitter [@Buckellew](https://twitter.com/Buckellew), or through the [Mobile Insights blog](#).

Susanne Hupfer, Ph.D., is a Senior Analyst with the IBM Center for Applied Insights, where she leads fact-based research for innovation leaders. Her recent work includes the [IBM Business Tech Trends](#) and [Champions of Software as a Service \(SaaS\)](#) studies. Previously, she worked in IBM Research, helping to direct the IBM Center for Social Business. Prior to joining IBM, she co-founded a technology start-up that developed software to help users seamlessly manage their electronic information in the cloud. She earned her doctorate in computer science from Yale University and has received nine patents. You can contact Susanne at susanne_hupfer@us.ibm.com or on Twitter [@cybersooz](https://twitter.com/cybersooz). Also check out [her posts](#) on the Center's blog.

Contributors

Ron Favali
Julie Yamamoto
Angie Casey

Tanya Dhamija
Megan McNamee
Lindsey Pritzlaff



Notes and sources

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New Orchard Road
Armonk, NY 10504

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